DOCUMENT RESUME

ED 322 849 HE 023 792

TITLE	FY 1988 Research Proposal and Award Activities by Predominantly Undergraduate Institutions. National Science Foundation Report 90-36.
INSTITUTION	National Science Foundation, Washington, D.C.
PUB DATE	Mar 90
NOTE	41p.; For a related document, see HE 023 793.
AVAILABLE FROM	Forms and Publications Unit, Room 232, National Science Foundation, 1800 G St., N.W., Washington, DC 20550 (free).
PUB TYPE	Reports - Evaluative/Feasibility (142)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Comparative Analysis; *Grants; Higher Education; Racial Differences; Researchers; *Research Proposals; Research Universities; *Scientific Research; Sex Differences; *Undergraduate Study
IDENTIFIERS	*National Science Foundation

ABSTRACT

The study compared proposal and award data on investigators from predominantly undergraduate institutions (PUIs) with that of non-PUI institutions, called "research competitive universities" (RCUs). A total of 21,040 research proposals from academic institutions, which were competitively reviewed and decided in Fiscal Year 1988 by the National Science Foundation's (NSF) five disciplinary research directorates, were analyzed. Some proposals from PUIs were submitted directly to NSF standard disciplinary programs, while others were submitted via a special gateway called Research in Undergraduate Institutions (RUIs) and are noted as RUI proposals. The study was designed to see what similarities and differences existed among RUI, PUI-direct, and RCU proposals. Within these three groups, proposals were examined along institutional type and proposer characteristics (experience, race or ethnicity, and gender). Principal findings include: (1) 12% of the proposals were submitted by investigators from PUIs; 8% of all awards were made to PUI researchers, and they accounted for 5% of the funding awarded competitively; and (2) nearly one-third of awards for PUI-direct proposals and one-quarter of awards to RUI proposals went to researchers who had not submitted any proposals during the preceding 5 years. Detailed tables providing analyses by NSF Directorate, and in a few cases, Division, are appended. Includes two references. (JDD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED322849

National Science Foundation
Report 90-36
March 1990

FY 1988 Research Proposal and Award Activities by Predominantly Undergraduate Institutions

HE023792

A Report by
NSF's Program Evaluation Staff

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
NAT. SCIENCE FOUNDATION
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☒ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

BEST COPY AVAILABLE

The National Science Foundation has TDD (Telephonic Device for the Deaf) capability which enables individuals with hearing impairments to communicate with the Division of Personnel Management for information relating to NSF programs, employment, or general information. This number is (202)357-7492.

TO ORDER PUBLICATIONS BY E-MAIL

Address requests (on BITNET) to pubs@nsf or (on INTERNET) to pubs@NOTE.NSF.GOV.. Specify publication number, title, number of copies desired, and your complete mailing address.

Additional copies of this report are available from Forms and Publications Unit, Room 232, National Science Foundation, 1800 G Street, N.W., Washington, D.C. 20550. Please cite report NSF 90-36.

National Science Foundation
Report 90-36
March 1990

FY 1988 Research Proposal and Award Activities by Predominantly Undergraduate Institutions

A Report by
NSF's Program Evaluation Staff

NSF 90-36

FY 1988 Research Proposal and Award Activities by Predominantly Undergraduate Institutions

TABLE OF CONTENTS

		Page
I.	Introduction and Purpose	1
II.	Summary of Principal Findings	3
	A. By Institutional Type	3
	B. By Proposer's Experience	3
	C. By Proposer's Race or Ethnicity, and Gender	4
	D. Analysts' Comments	5
III.	Study Background and Analytic Approach	5
IV.	Results by Institution Grouping	5
	A. Proposals	5
	B. Awards and Success Rates	6
	C. Distribution of Funds	6
	D. Proposal, Award, and Resource Distribution Patterns	7
V.	Results by Characteristics of Principal Investigators	8
	A. Success Rates	8
	B. Gender	9
	C. Race and Ethnicity	9
	D. Previous Proposal Submissions	10
	1. Experience Distribution by Proposal Type	10
	2. FY 1988 Award and Declination Patterns	11
	Notes and References	13

Appendices:

A. NSF Directorate and Division Structure

B. NSF Support for Predominantly Undergraduate Institutions and FY 1988 List of PUI-ineligible Institutions

C. FY 1988 Proposals by Division and Gender of Proposer

D. FY 1988 Proposals by Division and Race/Ethnicity of Proposer

E. FY 1988 Award Shares by Gender and Race/Ethnicity of Proposers

F. FY 1988 Declination Shares by Gender and Race/Ethnicity of Proposers

G. FY 1988 Award Shares by Number of Proposals Submitted in FYs 1983-87

H. FY 1988 Declination Shares by Number of Proposals in FYs 1983-87

NSF 90-36
March 1990

FY 1988 Research Proposal and Award Activities by Predominantly Undergraduate Institutions

I. INTRODUCTION AND PURPOSE

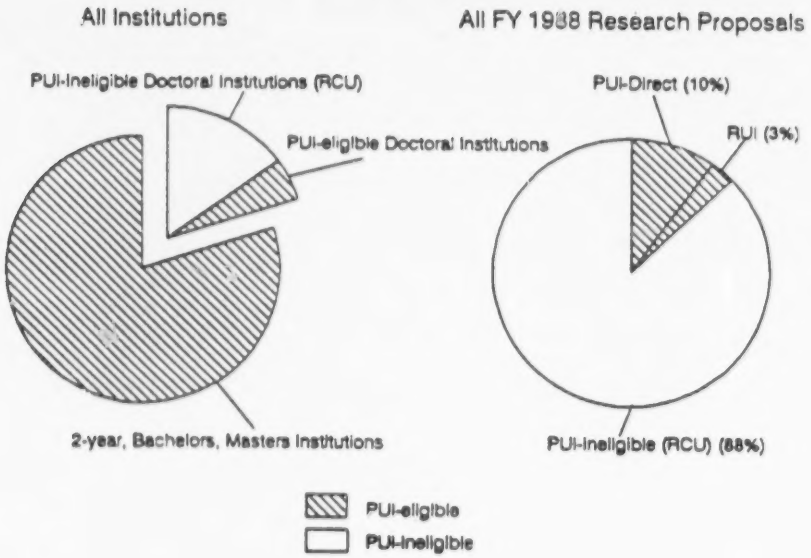
This report summarizes an analysis of 21,040 research proposals from academic institutions that were competitively reviewed and decided in Fiscal Year (FY) 1988 by NSF's five disciplinary research directorates. (Directorate and divisional abbreviations are defined in Appendix A). All types of research proposals were included, i.e., requests for support for individual investigators, facilities, centers, and groups.

The purpose of the study was to compare proposal and award data on investigators from Predominantly Undergraduate Institutions (PUIs) with that of non-PUI institutions, called in this report "research competitive universities" (RCUs). NSF defines PUIs as higher education institutions that awarded a total of 20 or fewer doctorates in NSF-supported fields in the two years prior to the fiscal year of proposal submission. Such institutions include 2-year, bachelors, masters, and doctoral institutions that do not exceed the PhD production ceiling; in FY 1988, all institutions and portions of institutions except those listed in Appendix B were PUI-eligible. Higher education institutions may belong to either the PUI or RCU category. About one-eighth of research proposals decided upon in FY 1988 were from PUIs.

Proposals from PUIs can be submitted directly to NSF standard disciplinary programs, or go to the same programs via a special gateway called Research in Undergraduate Institutions (RUI) (See Appendix B for description). The RUI initiative was designed for research proposals from institutions that focus on undergraduate education but engage in research that often involves undergraduates. In this report, proposals from PUIs submitted directly to disciplinary programs are termed PUI-direct proposals. The study was designed to see what similarities and differences existed among RUI, PUI-direct, and RCU proposals.

Figure 1 illustrates that, while most of the academic institutions in the U.S. are PUI-eligible, the majority of proposals to NSF are submitted by researchers at RCU, or PUI-ineligible, institutions.

Figure 1



The overall picture of FY 1988 research proposal activity by these three groups was as follows:

Table 1

Proposal Type	Proposals	%[1]	Awards	%[1]	"Success Rate"[2]
PUI-eligible:					
RUI	559	3%	168	3%	30%
PUI-direct	2,004	10%	336	6%	17%
PUI-ineligible (RCU)	18,477	88%	5,508	92%	30%
TOTAL	21,040	100%	6,012	100%	28%

[1] Percentages do not equal 100% due to rounding.
[2] Calculated as awards/(awards + declinations).

Within these three groups, proposals were examined along two separate lines: institutional type, defined by the highest degree offered, and proposer characteristics. All comparisons are made in terms of distribution of awards and declinations within the three proposal groups described above. Accordingly, most of the analysis focuses on award shares and declination shares, which are expressions of proportion. Shares differ from success rates in that shares compare distributions of awards only, or declinations only. For example, if 38% of all awards were made to doctoral institutions, the award share for these institutions would be 38%. Shares of total research funding are also given. In FY 1988, the total funding for the 6,012 awards was $849.1 million, of which PUI-eligible institutions received $49.6 million. (See Note 1 at end of report).

II. SUMMARY OF PRINCIPAL FINDINGS

A. By Institutional Type:

- Of 21,040 research proposals, 12% (or 2,563) were submitted by investigators from PUIs; 8% of all awards were made to PUI researchers, and they accounted for 5% of the funding awarded competitively in that year.

- As a group, 2-year, bachelors, and masters institutions submitted 49% of the PUI proposals and received 51% of awards and 48% of the research funding granted to PUIs.

- While bachelors and masters institutions were more likely to have been supported through RUI, 2-year and doctoral institutions were more likely to have been supported directly by disciplinary programs.

- Success rates for PUI proposals were much higher if submitted through RUI than if submitted directly (30% vs. 17%). The RUI success rate of 30% was equivalent to that for RCUs.

- More than three-quarters of PUI proposals and two-thirds of the PUI awards were submitted directly to, and made by, disciplinary programs. All directorates except BBS awarded more total funding to PUI investigators via directly submitted proposals than through RUI proposals.

- While the proportion of PUI proposals submitted by each type of institution varied, no one type was especially successful or unsuccessful in terms of proportions of awards and funding received relative to its proportion of proposals submitted.

B. By Proposer's Experience:

- Half of all FY 1988 research proposals were submitted by PIs who had submitted no, or only one, proposal to NSF during the previous five years; more than 50% of FY 1988 awardees from PUIs belonged to this category, whether they submitted through RUI or directly.

- Nearly one-third of awards for directly-submitted PUI proposals and one-quarter of awards to RUI proposals went to researchers who had not submitted any proposals to NSF during the preceding five years. In contrast, nearly one-half of awards to research competitive universities went to investigators who had submitted two to five proposals.

- Among proposers who had submitted no or one proposal to NSF during the FY 1983-87 period, those submitting PUI-direct or RUI proposals in FY 1988 received a higher proportion of the FY 1988 awards than proposers in this group who submitted RCU proposals. Conversely, among proposers who had submitted two or more proposals during the same five year period, those submitting RCU proposals in FY 1988 received the highest share of the FY 1988 awards.

C. By Proposer's Race or Ethnicity, and Gender:

- In terms of relative distributions of awards and declinations, proposals from female, black, Hispanic, Native American, and Alaskan Native applicants generally received larger shares of awards than declinations. The reverse was generally true for proposals from male, white, and Asian and Pacific Islander proposers.

- Award shares for proposals from women, blacks, and Hispanics were highest for proposals from PUIs submitted directly to disciplinary programs. The largest numbers of awards to these same proposer groups were to RCU.

- Fifteen percent of proposals were from women, who overall received 11% of awards. The Directorates with the fewest proposals from women (ENG and CISE) made proportionally more awards to them, while the recipient of the greatest number of proposals from women (BBS) declined slightly higher percentages of women than it awarded.

- Fifteen percent of proposers were non-white. They received 12% of the awards. Additionally: (1) a greater proportion of PUI-direct proposers were non-white; (2) among awardees, non-whites submitting PUI-direct proposals received proportionally more awards than non-whites submitting any other type of proposal; and (3) among declinees, non-whites who submitted PUI-direct proposals were declined at a proportionally lower rate than non-white proposers in other proposal groups.

- Women, blacks, Hispanics, and investigators with little or no proposal experience with NSF in the preceding five years who submitted PUI-direct proposals were proportionally more successful in receiving awards than colleagues in the same groups who had submitted RUI or RCU proposals.

D. Analysts' Comments:

The review of RUI proposals is handled by the same disciplinary programs that make decisions about the PUI-direct (and RCU) proposals. The principal factors that may account for the higher success rate of RUI proposals compared to those submitted directly by PUI institutions are:

(1) reviewers are asked to consider the likelihood of heavier teaching loads and limited support personnel and equipment at RUI institutions in general, as well as the specific institutional effects of supporting the research, as described in a "RUI impact statement" prepared by the proposer; and,

(2) program officers consider RUI proposals in light of RUI funding targets established annually by each directorate or division.

III. STUDY BACKGROUND AND ANALYTIC APPROACH

This study was undertaken to compare proposals from PUI-eligible and PUI-ineligible institutions in a number of different ways. One of the reasons for doing so was to examine a variety of contentions made by different segments of the research community about NSF award patterns. The report, however, is not intended to address any specific perception.

The proposal groups were analyzed along two main dimensions: how awards, declinations, and funding levels were distributed by institutional type; and how award and declination shares were distributed in terms of a variety of characteristics, including gender, race, and ethnicity, of the proposers. All variables were then examined across and within the five directorates. In one analysis, subdirectorate (i.e., division-level) data are used.

IV. RESULTS BY INSTITUTION GROUPING

The first series of analyses consisted of looking at FY 1988 proposals in terms of similarities and differences in proposal submission rates, award rates, and share of award funding across the three proposal groups. Within these groups, analysis focused on the distribution of proposals among 2-year, baccalaureate, masters, and doctoral institutions.

A. Proposals

While most FY 1988 research proposals were from RCUs, 12% were submitted by researchers at PUIs. Of these, more than three-quarters were submitted as standard program (PUI-direct) proposals (See Table 2). PUI-direct proposals outnumbered RUI proposals from 2.3:1 in the Mathematical and Physical Sciences (MPS) Directorate to 12:1 in ENG.

Table 2

Proposal Distribution by Directorate and Proposal Group

	BBS	CISE	ENG	GEO	MPS	All
RUI	225	34	36	74	190	559
PUI-direct	733	158	440	233	440	2,004
RCU	6,749	1,355	3,945	2,636	3,792	18,477
Total	7,707	1,547	4,421	2,943	4,422	21,040

Across the five directorates, the largest percentage of proposal decisions (36%) were made by the BBS directorate, and the smallest (8%) by CISE.

Independent of type of institution, proposals from PUIs were more frequently submitted directly rather than as RUI proposals. The degree to which this was true varied by institutional type. In descending order of percentage of RUI proposals, the breakdown was: bachelors (40%), 2-year (33%), masters (30%), and doctoral (13%). As a group, researchers from doctoral institutions submitted 85% of all proposals; the residual were submitted by 2-year, bachelors, and masters institutions. Seven percent of proposals from doctoral institutions were from PUIs.

B. Awards and Success Rates

PUI proposers received both direct and RUI awards, which together accounted for 9% of all awards (See Table 1, in Introduction). While two-thirds of all PUI awards were made for proposals submitted directly to disciplinary programs, a PUI proposer was more likely to receive an award as a result of submitting a RUI proposal. This was due to differences in success rates, which ranged from 17% for proposals submitted by PUI investigators directly to disciplinary programs to 30% for RUI proposals (and proposals from RCUs). Across proposal groups, awards to doctoral colleges and universities accounted for 88% of all awards. Five percent of these were submitted by PUIs.

C. Distribution of Funds

Five percent of funds associated with the proposals tracked in this study were awarded to PUI investigators. The PUI share of funds was: CISE, 2%; MPS and ENG, each 4%; GEO, 6%; and BBS, 9%. Among PUIs, 39% of all research funding resulted from RUI proposals. This proportion ranged from 19% in ENG to 54% in BBS. Across types of PUIs, doctoral institutions received 24% of their funding from RUI proposals, while 71% of bachelors institution funding came from RUI proposals. While funding for doctoral institution awards, regardless of proposal type, represented 96% of the grand total, PUI-eligible doctoral institutions received 2%

of the doctoral total. Table 3 shows funding levels for each institutional type by proposal group.

Table 3

Funding Distribution by Proposal Group and Institutional Type
In Thousands of Dollars

	2-year	Bach.	Mast.	Doct.	Other[1]	All	Percent
RUI	$40	$2,203	$4,911	$3,245	0	$10,399	1.8%
PUI-dir.	180	909	4,670	10,535	0	16,293	2.9%
RCU	0	30[2]	942	525,686	6,836	533,494	95.2%
Total	220	3,142	10,522	539,466	6,836	560,186	
% of Total	<1%	<1%	1.9%	96.3%	1.2%		
% of all PUI	<1%	11.6%	35.9%	51.6%	(all PUI = 26,692)		
% of all RUI	<1%	21.2%	47.2%	31.2%			

---

[1] Principally graduate research institutions that do not award degrees (e.g., Woods Hole Oceanographic Institute).

[2] Institutions in which: (1) the graduate enrollment exceeds the undergraduate enrollment, or (2) doctoral programs exist, but degrees are technically awarded by another institution.

Proposers from bachelors institutions submitted the greatest proportion of RUI proposals (40%) and received the highest percentage of their award funds from RUI proposals (71%). The pattern of higher funding share than award share for RUI proposals held to a lesser extent with masters and doctoral institutions.

Funding to 2-year, bachelors, and masters institutions combined represented 48% of all research funding to PUIs. This seems to have been due to masters institutions receiving more than 35% of PUI awards and funding.

D. Proposal, Award, and Resource Distribution Patterns

The distribution of proposal, award, and resource shares among PUIs differed by institutional type. As might be expected, the distribution of proposal shares by type of institution, from least to greatest, was: 2-year, bachelors, masters, and doctoral. The size of each type's proposal share was nearly identical to the corresponding percentage of awards and funding. Thus, no one

institutional type did noticeably better or worse than any other type in terms of receiving awards or funding.

V. RESULTS BY CHARACTERISTICS OF PRINCIPAL INVESTIGATORS

The study also examined proposals reviewed in FY 1988 in terms of who submitted the proposals. Specifically, analysis focused on individual PI gender, race and ethnicity, and previous experience with NSF. Proposers are not required to submit either gender, race, or ethnicity data; however, gender data are 99.6% complete and race/ethnicity data are 98.3% complete. Previous experience was defined in terms of the number of proposals that each FY 1988 proposer had submitted during the FY 1983-87 period.

Slight differences exist between the data in this section and the preceding one, due to minor database clean-ups that occurred between creation of the three sets of computer reports that underpin this document.

A. Success Rates

Appendix C presents division-level data on the numbers of proposals, awards, declinations and success rates based on gender, while Appendix D presents the same numbers based on their race or ethnicity. These tables do highlight several things about groups of researchers that have not been heavily involved with NSF in the past:

- While nearly all black, Hispanic, and Native American PIs at PUIs submitted PUI-direct proposals, rather than RUI proposals, the majority of proposers in these groups submitted RCU proposals.

- Success rates for black and Hispanic investigators at RCUs were higher overall than corresponding rates for PUI-direct proposals.

- While more proposals were submitted by male PIs than female PIs, regardless of race or ethnicity, a higher proportion of proposals from black researchers were submitted by women as compared with the proportion of proposals from Hispanics submitted by women.

- Success rates for RCU proposals from black and Hispanic women were higher than those for RCU proposals from men. The same pattern held for black women and men who submitted PUI-direct proposals. The number of RUI proposals from minorities was too small for success rate calculation.

BBS, ENG, and MPS reviewed the most proposals from black, Hispanic, and Native American proposers, with the numbers being fairly evenly distributed among the three directorates. For PUI-

direct proposals, ENG received the most proposals, while MPS the least, while, among RCU proposals, the order was BBS, ENG, and MPS.

PUI-direct and RCU proposals from black, Hispanic, and Native American proposers to MPS collectively received the most awards and had the highest success rates. Within directorates, proposing patterns of men and women in these racial and ethnic groups differed markedly; the small numbers of proposals in these subgroups did not provide sufficient data for analyzing success rates.

B. Gender

Regardless of directorate or proposal group, approximately 85% of proposals on which decisions were made in FY 1988 were submitted by males. Across the directorates, the proportion of awards to males ranged from 82% for the PUI-direct group to 89% for proposals from RCUs. For declinations, the range was 84% for PUI-direct to 89% for RUI. Without exception, the proposal group with the largest directorate percentages of awards to women was PUI-direct. (See Appendices E and F for complete gender data.)

BBS received the greatest proportion of proposals submitted by women, while ENG received the fewest. However, while it is not surprising that ENG awarded the highest percentage of male proposers and BBS the least, ENG and CISE made proportionally more awards to females relative to the number of proposals that were submitted by females than did BBS. BBS declined slightly higher percentages of proposals from women than it awarded.

Among proposal groups, award and declination shares for proposals from women did not differ markedly: for RUI, 14% compared with 11%; for PUI-direct, 18% compared with 15%; and for RCU, 11% to 13%. While these percentages are similar, they do not reflect the significant differences in numbers of proposals in each proposal group that were discussed previously. Thus, the number of RCU awards to women was more than 25 times that of the number of RUI awards to female researchers. Similarly, the number of PUI-direct awards to women was nearly three times that of RUI awards to women.

C. Race and Ethnicity

Overall, more than 85% of proposals upon which a funding decision was made in FY 1988 were submitted by white researchers. Across the directorates, award and declination shares to whites by proposal group were: RUI, 90% and 89%; PUI-direct, 82% and 84%; and RCU, 88% and 87%.

Across proposal groups, the PUI-direct group received the largest proportion of proposals from non-white researchers. Among awardees, non-white proposers received proportionally more awards than non-white proposers who submitted other types of proposals, while, among declinees, non-whites who submitted PUI-direct proposals were declined at a proportionally lower rate than non-white proposers submitting RCU or RUI proposals. (See Appendices E and F for complete race and ethnicity data.)

Proposals from Asian and Pacific Islander researchers accounted for 5.3% of the five directorate total. While these PIs were included in the non-white calculations, they are not considered by NSF as a minority group because they are not underrepresented in science and engineering. Award and declination share distributions for Asian and Pacific Islander PIs differed from those of the other non-white groups in that declination shares were greater than award shares, regardless of proposal type.

Proposals submitted by both black and Hispanic PIs were proportionally, but not numerically, highest in the PUI-direct group. The number of black awardees in the RCU group exceeded that of the PUI-direct group by more than a factor of three, while for Hispanics the difference was more than a factor of 5.

D. Previous Proposal Submissions

Another way to describe proposers is in terms of the level of previous experience that they have had with NSF proposal submission. To examine this, FY 1988 proposers were categorized according to the number of proposals that they had submitted to NSF during the FY 1983-87 period. (See Appendices G and H for complete previous submission data.) For this analysis it was not possible to determine whether those who had submitted few proposals to NSF previously were new to sponsored research, returning after a career interruption, or veteran researchers who usually obtained funding from non-NSF sources.

1. Experience Distribution by Proposal Type:

Fifty percent of all FY 1988 proposals were submitted by PIs who had submitted no or one proposal to NSF during the preceding five-year period; 40% of these FY 1988 proposals received awards. Table 4 shows that RUI and PUI-direct proposals from PIs who had submitted no or one proposal to NSF during the same period received 54% of awards in those proposal groups, compared with 38% of the award share among RCU proposals. Regardless of proposal group, declination shares for these PIs were proportionally higher: 62% for RUI; 69% for PUI-direct; and 52% for RCU.

Table 4

Award and Declination Shares
by Proposal Group and Prior Proposal Submissions[1]

Prior Exp:	0-1 (50%)		2-5 (40%)		6-10 (8%)		10+ (2%)	
1988 Prop:	Awd	Dec	Awd	Dec	Awd	Dec	Awd	Dec
RUI	54%	62%	43%	36%	4%	2%	0%	0%
PUI-direct	54%	69%	39%	27%	5%	4%	2%	1%
RCU	38%	52%	47%	38%	12%	8%	3%	2%

[1] Percentages do not total due to rounding.

By comparison, PIs who had submitted two to five proposals were awarded at lower rates in the RUI and PUI-direct groups, but higher in the case of RCU. This same group of PIs accounted for a smaller proportion of the declinations than their less experienced colleagues, regardless of proposal group.

A small but notable proportion of proposers had submitted six or more proposals previously. They predominated in the RCU group. Regardless of the type of proposal they submitted for the FY 1988 review, the more experienced -- or at least more persistent -- proposers were more likely to have been awarded than declined.

These findings relating to the distribution of proposals from proposers with different levels of experience with NSF are consistent with analysis of data collected for an earlier study, Proposal Review at NSF: Perceptions of Principal Investigators (see Note 3). That study surveyed all FY 1985 applicants who submitted individual-investigator proposals.

2. FY 1988 Award and Declination Patterns:

Across the five directorates, award shares to FY 1988 proposers who had not submitted any proposals during the preceding five years were smaller than corresponding declination shares: RUI ranged from 25% to 39%; PUI-direct - 31% to 47%; and RCU - 18% to 32%. The PUI-direct percentages for those submitting no or one proposal in recent years illustrate that proposers from yet another group that has not dealt extensively with NSF received proportionally the greatest share of awards as a result of submitting PUI-direct proposals.

RUI and PUI-direct proposals submitted by proposers who had applied for NSF funding once during the FY 1983-87 period were generally more likely to be awarded than declined; RCU award and declination shares were equal. While overall award and declination shares for RUI proposals were 29% and 22%, respectively, award shares varied within directorates by as much as a factor of two. Directorates were not consistent across proposal groups regarding likelihood of making awards to this

group of proposers. Among PUI-direct and RCU proposals from this group of proposers, MPS made the largest proportion of awards, while among RUI proposals, the same directorate ranked last in proportion of awards to these researchers.

Across proposal groups, those who had previously submitted two to five proposals to NSF received the largest award shares when compared with those who had not submitted a previous proposal and with those who had submitted one. Within proposal groups, award shares for those who had submitted two to five proposals were larger than declination shares. For RUI, PUI-direct, and RCU, award and declination shares were distributed as follows: 43% to 36%; 39% to 27%; and 47% to 38%.

As with investigators who submitted two to five proposals, researchers who had submitted six or more proposals received proportionally more awards than declinations. Award shares for proposers who belonged to the latter group were 4% for RUI, 7% for PUI-direct, and 15% for RCU. Declination shares were somewhat less: RUI, 2%; PUI-direct, 5%; and RCU, 10%, respectively. Looking across experience groups and proposal groups, the more experienced proposers (i.e., those who had submitted two or more proposals during the FY 1983-87 period) and submitted an RCU proposal in FY 1988 received the largest award shares. Conversely, less experienced proposers received the greatest award shares if their 1988 proposal had been submitted as a PUI-direct proposal.

Detailed tables providing analyses by NSF Directorate, and in a few cases, Division, are appended. For any given division-level table, divisions not listed received no proposals in that particular group. In some tables, small discrepancies between total number of proposals received and total number of awards plus declinations are due to proposals that were: (1) submitted in FY 1988 but reviewed in FY 1989; (2) withdrawn from consideration; or (3) judged to be inappropriate before review because they did not meet program guidelines.

Notes and References:

1. We also considered calculating average annual award size. While in certain circumstances this can be done effectively, it is not appropriate to do so in this study because the population includes a broad range of proposal types (e.g., individual investigator, facilities, and large research center proposals) and variable lengths of awards (i.e., from one to several years).

2. Requests for technical information or comments on this report may be directed to Linda Parker, NSF Program Evaluation Staff, Room 425, 1800 G St., N.W., Washington, DC 20550.

3. A description of NSF's proposal review system, the results of a survey of 9,500 applicants' perceptions of it, and factors in award success are presented in NSF 88-4, "Proposal Review at NSF: Perceptions of Principal Investigators," available from NSF's Forms and Publications Unit.

4. A summary of the PI Survey mentioned in note 3, with additional commentaries, may be found in the Winter 1989 issue (Vol. 14, Nr. 1) of Science, Technology and Human Values.

The design and overall management of this project were conducted by Lola Rogers of NSF's Division of Research Initiation and Improvement, and Linda Parker of NSF's Program Evaluation Staff (PES). Jim Slaugh of NSF's Office of Information Systems provided invaluable assistance in producing the computer reports upon which the analysis was done. Kristi Merritt and Bob Pickard, George Washington University graduate students, contributed to the study design. Susan Queen of PES performed the special analysis of the PI Survey data that were described in this report. Appendices were prepared by George Pittmon. Interpretation of findings and preparation of the report were done by Linda Parker, under the direction of Jim McCullough, PES Director.

Appendix A

BBS	Biological, Behavioral and Social Sciences	
	BNS	Behavioral and Neural Sciences
	BSR	Biotic Systems and Resources
	DCB	Division of Cellular Biosciences
	DIR	Division of Instrumentation Resources
	DMB	Division of Molecular Biosciences
	SES	Social and Economic Science
CISE	Computer and Information Science and Engineering	
	ASC	Advanced Scientific Computing
	CCR	Computer and Computation Research
	CDA	Cross-Disciplinary Activities
	IRI	Information, Robotics and Intelligent Systems
	MIP	Microelectronic Information Processing Systems
	NCRI	Networking and Communications Research and Infrastructure
ENG	Engineering	
	CBTE	Chemical, Biochemical, and Thermal Engineering
	CDR	Cross-Disciplinary Research
	CES	Critical Engineering Systems
	DMCE	Design, Manufacturing, and Computer-Integrated Engineering
	ECSE	Electrical, Communications, and Systems Engineering
	EET	Emerging Engineering Technologies
	MSME	Mechanics, Structures, and Materials Engineering

GEO	Geosciences	
	ATM	Atmospheric Sciences
	DPP	Division of Polar Programs
	EAR	Earth Sciences
	OCE	Ocean Sciences
MPS	Mathematical and Physical Sciences	
	AST	Astronomical Sciences
	CHE	Chemistry
	DMR	Division of Materials Research
	DMS	Division of Mathematical Sciences
	PHY	Physics

Appendix B

NSF Support for Predominantly Undergraduate Institutions and FY 1988 List of PUI-ineligible Institutions

Predominantly undergraduate institutions are defined in terms of the nature of the institution, not solely on the basis of highest degree offered. Included are 2-year, bachelors, masters institutions, and those doctoral institutions that did not award a total of more than 20 doctoral degrees in fields supported by NSF during the preceding two academic years. Autonomous campuses in a system are considered to be independent institutions for this purpose.

The list of some 500 institutions not considered eligible for PUI designation is set forth in this Appendix. The list includes RCUs, certain campuses of a multi-campus system, and certain schools within an institution (such as medical schools).

All NSF disciplinary research programs provide support for faculty at Predominately Undergraduate Institutions in three ways:

1. Research and instrumentation proposals submitted directly to the regular NSF disciplinary programs;

2. Research and instrumentation proposals submitted to the same program but through an alternative "gateway" entitled Research in Undergraduate Institutions (RUI). Only faculty in non-doctoral departments within PUIs can submit through RUI; and

3. Research Opportunity Awards (ROAs), which are supplements that allow faculty at PUIs to participate in research activities with NSF-support investigators at research universities, or in other well-equipped laboratories. They differ from the previous types of support because: (1) beneficiaries do not submit complete NSF proposals; and (2) while ROA beneficiaries are from PUIs, the awards are made to the host institution.

Only proposals in categories 1 and 2 are counted as PUI proposals in this study.

RUI proposals are processed by disciplinary program officers, who also handle all proposals submitted directly to their respective program area. Reviewers of RUI proposals are notified that: (1) although scientific merit is paramount, they should take into account the likelihood of heavy teaching loads and limited support personnel and equipment at proposing institutions; and (2) they are to use the RUI "Impact Statement" when considering NSF review criterion four, which pertains to the effect of the research on the science and engineering infrastructure.

Funding for proposals from PUIs (i.e., RUI proposals and regular disciplinary program proposals) comes from disciplinary program budgets; no separate monies are allocated. Funding targets are established annually for Foundation-wide support for PUIs, as well as for the RUI component. Support for PUIs has increased annually since the Foundation began tracking research awards to PUIs, expanding from $29 million in FY 1983 to nearly $55 million in FY 1988. Foundation-wide and directorate targets have been exceeded every year since FY 1984. Similarly, the RUI activity has grown from 141 awards totalling $6.6 million in FY 1984 to 290 new and continuing awards totalling $15.9 million in FY 1988.

NSF encourages the PUI community to submit proposals, and strongly encourages program staff to make outreach visits to a number of undergraduate campuses each year to discuss NSF funding opportunities.

Appendix B Cont.
FY 1988 PUI-Ineligible Institutions

Adelphi Univ	NY
Air Force Inst of Tech	OH
Albany Medical Col	NY
Amer Univ Spec Oper Res	DC
American University	DC
Applied Physics Lab (JHU)	MD
Arizona State University	AZ
Auburn Univ	AL
Auburn Univ Central Off	AL
Auburn Univ-Agr Exp Sta	AL
Baylor Col of Medicine	TX
Baylor U Baylor U Med Ctr	TX
Bethel C S Bethel Theolog	MN
Bethel Col & Sem Cent Off	MN
Boston College	MA
Boston Univ Sch of Med	MA
Boston University	MA
Bowling Grn S U Main Cam	OH
Brandeis University	MA
Brigham Young Univ	UT
Brown University	RI
Bryn Mawr Col	PA
C W&M VA Inst Marine Sci	VA
Cal Sch of Prof Psy S D	CA
Cal Sch Prof Psy Berkeley	CA
Cal Sch Prof Psy L A	CA
California Inst of Tech	CA
Caribbean Ctr Adv Studies	RQ
Carnegie Mellon Univ	PA
Carnegie Mellon-Inst Tech	PA
Carnegie-Mel Univ-Ins Res	PA
Case W R Univ Sch of Med	OH
Case Westrn Res Case Inst	OH
Catholic U of America	DC
Claremont Graduate School	CA
Clark Atlanta Univ	GA
Clark University	MA
Clarkson University	NY
Clemson Univ	SC
Clemson Univ Agr Exp Sta	SC
Col of Pharmaceutical Sci	NY
Colo St Univ Agr Exp Sta	CO
Colorado School of Mines	CO
Colorado State University	CO
Columbia U Col Phys Sur	NY
Columbia U Hudson Lab	NY
Columbia U Lamont Geo Obs	NY
Columbia U Press	NY
Columbia U Sch Soc Work	NY
Columbia Univ Sys Off	NY
Columbia University	NY
Concordia Theol Sem	IN
Cornell Univ - Endowed	NY
Cornell Univ - State	NY
Cornell Univ Medical Ctr	NY
Creighton Univ Sch of Med	NE
CUNY Grad Sch & Univ Ctr	NY
CUNY John Jay College	NY
CUNY Research Foundation	NY
CUNY System Office	NY
Dartmouth Col Med Sch	NH
Dartmouth Col Thayer Eng	NH
Dartmouth College	NH
Dominican House Studies	DC
Drexel University	PA
Duke Univ	NC
Duke Univ-Marine Lab	NC
Duke Univ-Sch of Medicine	NC
Eastern Baptist Theol Sem	PA
Emory Univ Sch of Med	GA
Emory Univ Yerkes Reg Pri	GA
Emory University	GA
Fielding Institute	CA
Florida Institute of Tech	FL
Florida State University	FL
Fordham U Novitiate	NY
Fordham University	NY
Fuller Theol Sem	CA
Ga Inst Tech Central Off	GA
Ga Tech Research Corp	GA
Ga Tech Research Corp	GA
Garrett-Evangel Theo Sem	IL
George Wash Univ Med Ctr	DC
George Washington Univ	DC
Georgetown Univ Sch Med	DC
Georgetown University	DC
Graduate Theol Union	CA
Hahnemann Med Col & Hosp	PA
Hartford Sem Fdn	CT
Harvard Ctr Hellenic Stud	MA
Harvard Medical School	MA
Harvard U Harvard Forest	MA
Harvard Univ Grad Sch B A	MA
Harvard Univ Herbarium	MA
Harvard Univ Observatory	MA
Harvard Univ Peabody Mus	MA
Harvard Univ Sch Pub Hlth	MA
Harvard University	MA
Howard Univ Col of Med	DC
Howard University	DC
Ill Inst of Tech Gas Tech	IL
Illinois Inst of Tech	IL

Ind U Purdue U Indnpls	IN
Ind U-Pur U-Indpls S Med	IN
Indiana State University	IN
Indiana Univ Fdn	IN
Indiana University	IN
Inst of Paper Chemistry	WI
Inst For Advanced Study	NJ
Iowa St U Science & Tech	IA
Iowa St Univ Agr Exp Sta	IA
Jewish Theol Sem of Amer	NY
Johns Hop U Ches Bay Inst	MD
Johns Hop U Hyg&Publ Hlth	MD
Johns Hop U Sch Adv Stds	MD
Johns Hop U-Sch of Med	MD
Kans St Univ Agr Exp Sta	KS
Kansas State University	KS
Kent St Univ	OH
Kent State University Fdn	OH
Kentucky Research Fdn	KY
La St U Med Ctr Shrevept	LA
La St Univ Agr Exp Sta	LA
La St Univ Baton Rouge	LA
La St Univ Medical Center	LA
Lehigh Univ	PA
Lexington Theol Sem	KY
Loma Linda Univ-Sch Med	CA
Louisiana State U Sys Off	LA
Loyola U Bellarmine Sch	IL
Loyola Univ of Chicago	IL
Loyola Univ Sch of Med	IL
M S U Ms Frst Prod Ut Lab	MS
Maharishi C Nat Law (DC)	IA
Maricopa Cnty C C Sys Off	AZ
Mass Col of Pharmacy	MA
Mass Inst of Tech (MIT)	MA
Med Univ of S Carolina	SC
Medical Col of Georgia	GA
Medical College of Pa	PA
Medical College of Wisc	WI
Meharry Medical Col	TN
Methodist Theol Sch Ohio	OH
Miami Univ Central Office	OH
Miami Univ Oxford Campus	OH
Mich St Univ Agr Exp Sta	MI
Michigan State University	MI
Mississippi State Univ	MS
Mont St Univ Agr Exp Sta	MT
Montana State University	MT
MS Agric & Frsty Exp Stat	MS
N C St Univ at Raleigh	NC
N C St Univ Agr Exp Sta	NC
N D St U Central Office	ND
N M St Univ Agr Exp Sta	NM
N Y Univ Medical Center	NY
National Graduate Univ	DC
Naval Postgraduate School	CA
New England Inst	CT
New Jersey Dental School	NJ
New Jersey Medical School	NJ
New Mexico St University	NM
New School For Social Res	NY
New York Medical Col	NY
New York Theological Sem	NY
New York University	NY
Northeastern University	MA
Northwestern University	IL
Northwstrn U Medical Sch	IL
Nova Univ Ocean Sci Ctr	FL
Nova University	FL
NE Ohio Univs Col of Med	OH
Ohio St Univ	OH
Ohio St Univ Col of Med	OH
Ohio St Univ Res Fdn	OH
Ohio St Univ Res Fdn	OH
Ohio St Univ Stone Lab	OH
Ohio Univ	OH
Okla St Univ Agr Exp Sta	OK
Oklahoma State Univ	OK
Oreg Grad Ins of Sci & T	OR
Oreg Hlth Scis Univ	OR
Oregon St U Agr Exp Sta	OR
Oregon St U Marine Sci	OR
Oregon St Univ	OR
Pa St U MS Hershey Med Ct	PA
Pa St Univ Agr Exp Sta	PA
Pa State Col Sys Off	PA
Polytec Inst NY Grad Ctr	NY
Polytechnic University	NY
Ponce School of Medicine	RQ
Portland State University	OR
Princeton Theol Sem	NJ
Princeton University	NJ
Purdue Research Fdn	IN
Purdue Univ Agr Exp Sta	IN
Purdue University	IN
Rand Grad Inst of Pol Sd	CA
Rensselaer Polytech Inst	NY
Robert Wood Johnson Med	NJ
Rockefeller Univ	NY
Rush University	IL
Rutgers U Douglass Coll	NJ
Rutgers U Livingston Col	NJ

Rutgers U New Brunswick	NJ
Southern Ill U Carbondale	IL
Southern Methodist Univ	TX
St John's University	NY
St Louis Univ-Inst Tech	MO
St Louis Univ-Sch of Med	MO
St Louis University	MO
Stanford Univ Hopkins Sta	CA
Stanford Univ Press Stanf	CA
Stanford Univ Sch of Med	CA
Stanford University	CA
Stevens Inst of Tech	NJ
Syracuse University	NY
SUNY at Albany	NY
SUNY at Binghamton	NY
SUNY at Buffalo	NY
SUNY at Stony Brook	NY
SUNY Bingmtn Sch Adv Tech	NY
SUNY Buffalo Hlth Sci Ctr	NY
SUNY Col Env Sci&Forestry	NY
SUNY Health Cntr Brooklyn	NY
SUNY Hlth Sc Ctr Syracuse	NY
SUNY Hlth Sci Ctr Stny Bk	NY
SUS-FL Inst Oceanography	FL
Teachers College	NY
Temple Univ	PA
Temple Univ Sch of Med	PA
Texas A&M Research Fdn	TX
Texas A&M U Agr Exp Sta	TX
Texas A&M U Agr Ext Ser	TX
Texas A&M U Eng Exp Sta	TX
Texas A&M U Main Campus	TX
Texas A&M U Marine Lab	TX
Texas Christian Univ	TX
Texas Tec U Hlth Sci Ctr	TX
Texas Tech University	TX
Texas Woman's Univ	TX
The Res Fdn of SUNY	NY
Thom Jefferson U Med Col	PA
Thomas Jefferson Univ	PA
Troy St Univ Cent Office	AL
Tufts U-Jackson Col Women	MA
Tufts Univ Fletcher Law	MA
Tufts Univ Sch of Dent	MA
Tufts Univ Sch of Med	MA
Tufts University	MA
Tulane Univ Delta Reg Pri	LA
Tulane Univ School of Med	LA
Tulane University	LA
U of Akron	OH
U of Ala at Birmingham	AL
U of Ala-Birm Med Col Ala	AL
U of Ala-Tus Gadsden Ctr	AL
U of Ariz Agr Exp Sta	AZ
U of Ariz Col of Med	AZ
U of Ca Bodega Marine Lab	CA
U of Cal Agr Exp Sta	CA
U of Cal Air Poll Res Ctr	CA
U of Cal Berk Agr Exp Sta	CA
U of Cal Biomed Project	CA
U of Cal Cal Col of Med	CA
U of Cal Dry Lands Res	CA
U of Cal Irvine	CA
U of Cal LA Agr Exp Sta	CA
U of Cal LA Biomed Proj	CA
U of Cal Navy Biol Lab	CA
U of Cal Phil Boyd R Ctr	CA
U of Cal Richmont Fld Sta	CA
U of Cal Riv Agr Exp Sta	CA
U of Cal San Francisco	CA
U of Cal Santa Barbara	CA
U of Cal Santa Cruz	CA
U of Cal Sch of Med	CA
U of Cal Sys Off	CA
U of Cal SC Cowell Col	CA
U of Cal SC Lick Observa	CA
U of Cal SC Merrill Col	CA
U of Cal SC Stevenson Col	CA
U of Cal SD Revelle Col	CA
U of Cal SD Scripps Inst	CA
U of Cal SD-Sch of Med	CA
U of Cal SF Sch of Med	CA
U of Chgo-Sch of Med	IL
U of Cincinnati Col Med	OH
U of Conn Marine Res Lab	CT
U of Conn Marine Sci Inst	CT
U of Dayton Lady of Carey	OH
U of Del Agr Exp Sta	DE
U of Denver Res Inst	CO
U of Fla Agr Exp Sta	FL
U of Fla Citrus Exp Sta	FL
U of Fla Eng&Ind Exp Sta	FL
U of Fla Fla St Museum	FL
U of Ga Agr Exp Sta	GA
U of Ga Sav Riv Ecol Lab	GA
U of Hawaii Agr Exp Sta	HI
U of Hawaii Col Trop Agr	HI
U of Hawaii Sch of Med	HI
U of Hlth Sci Chi Med Sch	IL
U of Idaho Agr Exper Sta	ID
U of Ill Agr Exp Sta	IL
U of Iowa Col of Med	IA

U of Kansas Main Campus	KS
U of Louisville Res Fdn	KY
U of Louisville Sch Med	KY
U of Mass Agr Exp Sta	MA
U of Mass Cranberry Exp S	MA
U of Md Agr Exp Sta	MD
U of Md Chesapeake Biol	MD
U of Me Agr Exp Sta	ME
U of Me Col of Tech	ME
U of Miami Sch Mar&Atmos	FL
U of Mich Medical School	MI
U of Minn Agr Exp Sta	MN
U of Minn Hormel Inst	MN
U of Minn Inst of Tech	MN
U of Minn Med Sch	MN
U of Mn Mayo Grad Sch Med	MN
U of Mo Agr Exp Sta	MO
U of Mo Sch of Med	MO
U of N C at Chapel Hill	NC
U of N C Inst Marine Sci	NC
U of N C School Medicine	NC
U of N D Sch of Med	ND
U of N H Agr Exp Sta	NH
U of N H Col of Tech	NH
U of N M Sch of Med	NM
U of Neb Agr Exp Sta	NE
U of Neb Med Ctr at Omaha	NE
U of New Hampshire	NH
U of Notre Dame	IN
U of Pa Sch of Vet Med	PA
U of Rochester Sch Med	NY
U of Southern Cal Sch Med	CA
U of Tenn Ctr Health Scs	TN
U of Tenn-Inst of Agrictl	TN
U of Texas at Arlington	TX
U of Texas at Dallas	TX
U of Texas Austin Campus	TX
U of Utah	UT
U of Utah Col of Medicine	UT
U of Va Sch of Medicine	VA
U of Wash-Press	WA
U of Wash-Sch of Med	WA
U of Wisc Army Math Ctr	WI
U of Wisc Madison Agr Sta	WI
U of Wisc Madison Med Sch	WI
U of Wisc Sys Off	WI
U Ark Fayett-Agr Exp Stat	AR
U Arkansas Fayetteville	AR
U Arkansas Med Scis Cam	AR
U C Santa Cruz Crown Col	CA
U Chicago Argonne Hosp	IL
U Houston-U Park Campus	TX
U Ill Med Ctr Peoria	IL
U Ill Med Ctr Rockford	IL
U Kansas Ctr Research Inc	KS
U Mn Gray Freshwater Bio	MN
U Okla Norman-Bio Sta	OK
U Oregon Dental School	OR
U Oregon Oregon Hlth Sci	OR
U S C Inst Arch & Anthrop	SC
U S International Univ	CA
U Tex Hlth Sc Ctr Dallas	TX
Unif Servs U of Hlth Scis	MD
United Theological Sem	MN
Univ of Akron Central Off	OH
Univ of Alabama Sys Off	AL
Univ of Ark Central Off	AR
Univ of Cal Berkeley	CA
Univ of Cal Los Angeles	CA
Univ of Cal Riverside	CA
Univ of Cal-San Diego	CA
Univ of California Davis	CA
Univ of Chicago Press	IL
Univ of Cin Main Campus	OH
Univ of Colo Hlth Sci Ctr	CO
Univ of Colo Sys Office	CO
Univ of Conn Agr Exp Sta	CT
Univ of Conn Health Ctr	CT
Univ of Fla Col of Med	FL
Univ of Ga Ga Exp Station	GA
Univ of Ga Marine Inst	GA
Univ of Ga Res Fdn Inc	GA
Univ of Hawaii Manoa	HI
Univ of Ill Chicago	IL
Univ of Ill Chicago Cir	IL
Univ of Illinois Urbana	IL
Univ of Iowa	IA
Univ of Kans Cent Office	KS
Univ of Kansas Med Center	KS
Univ of Kentucky	KY
Univ of Ky Agr Exp Sta	KY
Univ of Ky Medical Ctr	KY
Univ of Ky System Office	KY
Univ of Louisville	KY
Univ of Mass Amherst	MA
Univ of Mass Systems Off	MA
Univ of Md at Balt	MD
Univ of Md College Park	MD
Univ of Med & Dent of N J	NJ
Univ of Miami Sch of Med	FL
Univ of Mich Ann Arbor	MI
Univ of Mich Central Off	MI

Univ of Minn at St Paul	MN
Univ of Miss Medical Ctr	MS
Univ of Missouri Columbia	MO
Univ of Missouri Rolla	MO
Univ of N H System Office	NH
Univ of Neb System Office	NE
Univ of Nebraska Lincoln	NE
Univ of North Texas	TX
Univ of Ok Health Sci Ctr	OK
Univ of Oklahoma	OK
Univ of Oklahoma Res Inst	OK
Univ of Oregon Eugene	OR
Univ of Oregon Gen Ext	OR
Univ of Pa Sch of Med	PA
Univ of Pa Wharton Sch	PA
Univ of Pennsylvania	PA
Univ of Pitt Sch of Med	PA
Univ of Pittsburgh	PA
Univ of PR Med Sci Campus	RQ
Univ of R I Agr Exp Sta	RI
Univ of Rhode Island	RI
Univ of Rochester	NY
Univ of RI Grad Sch Ocean	RI
Univ of S C at Columbia	SC
Univ of S C Cent Office	SC
Univ of S D Sch of Med	SD
Univ of South Florida	FL
Univ of Southern Cal	CA
Univ of Southern Miss	MS
Univ of Tenn at Knoxville	TN
Univ of Tenn Space Inst	TN
Univ of Tex Inst Urb Stu	TX
Univ of Toledo	OH
Univ of Vt Agr Exp Sta	VT
Univ of Vt Col of Med	VT
Univ of Vt Col of Tech	VT
Univ of Wis Madison	WI
Univ of Wis Milwaukee	WI
Univ Colorado at Boulder	CO
Univ Del-Col Marine Stdys	DE
Univ Okla Hlth Scis Ctr	OK
Univ Pacific Medical Ctr	CA
Univ S Fla Marine Sc Inst	FL
Univ Tex Aus McDonald Obs	TX
University of Alabama	AL
University of Arizona	AZ
University of Chicago	IL
University of Connecticut	CT
University of Delaware	DE
University of Denver	CO
University of Detroit	MI
University of Florida	FL
University of Georgia	GA
University of Idaho	ID
University of Miami	FL
University of Minnesota	MN
University of Mississippi	MS
University of Montana	MT
University of Nevada Reno	NV
University of New Mexico	NM
University of Vermont	VT
University of Virginia	VA
University of Washington	WA
University of Wyoming	WY
University Maine	ME
Utah St Univ	UT
Utah St Univ Agr Exp Sta	UT
UC SF Radiolog Lab	CA
UCLA Ctr Hlt Sci Sch Med	CA
UMCEES Horn Point Env Lab	MD
UMDNJ Grad Sch of Bio-Med	NJ
UMDNJ-NJ Sc Osteopath Med	NJ
UT Grad Sch Galveston	TX
UT Health Science Center	TX
UT HS Ctr Grad Sch Bio Sc	TX
UT HSC Houston	TX
UT HSC San Antonio	TX
UT HSC Sch Pub Health	TX
UT Med Br Med School	TX
Va Commonwealth Univ	VA
Va Comonwlth U Health Sci	VA
Va Poly Inst Agr Exp Sta	VA
Vanderbilt U Sch of Med	TN
Vanderbilt Univ	TN
Virginia Poly Inst & St U	VA
W Va Univ Medical Center	WV
Wash St U Tree Fruit Res	WA
Wash Univ-Sch of Medicine	MO
Washington State Univ	WA
Washington University	MO
Wayne St Univ Sch of Med	MI
Wayne State University	MI
Wesleyan Univ	CT
West Va Univ Agr Exp Sta	WV
West Virginia University	WV
Widener Col Del Law Sch	PA
William Marsh Rice Univ	TX
Woods Hole Ocean Inst	MA
Wright Institute	CA
Yale Univ Peabody Museum	CT
Yale Univ Sch of Medicine	CT
Yale Univ Yale Univ Press	CT
Yale University	CT
Yeshiva U Albert Einstein	NY
Yeshiva University	NY

Appendix C.

FY 1988 Proposals by Division and Gender of Proposer

C-1. RUI Proposal Group

DIV	MALE PROPOSAL	MALE DECLINE	MALE AWARD	MALE RATIO	FEMALE PROPOSAL	FEMALE DECLINE	FEMALE AWARD	FEMALE RATIO
AST	9	3	6	66.7	0	0	0	***
CHE	71	54	13	19.4	13	8	3	27.3
DMR	21	16	5	23.8	2	1	1	50.0
DMS	56	42	12	22.2	2	0	2	100.0
PHY	22	14	7	33.3	3	1	2	66.7
CCR	13	8	5	38.5	1	1	0	0.0
IRI	6	4	2	33.3	2	1	1	50.0
MIP	5	5	0	0.0	1	0	1	100.0
NCR	8	1	7	87.5	0	0	0	***
ATM	8	5	3	37.5	2	0	2	100.0
DPP	1	0	1	100.0	0	0	0	***
EAR	49	29	17	37.0	2	1	1	50.0
OCE	14	10	4	28.6	1	1	0	0.0
BCS	4	3	1	25.0	0	0	0	***
CTS	3	2	1	33.3	0	0	0	***
DDM	7	5	2	28.6	0	0	0	***
ECD	1	0	1	100.0	0	0	0	***
ECS	16	8	6	42.9	0	0	0	***
EET	1	1	0	0.0	0	0	0	***
MSS	7	6	1	14.3	0	0	0	***
BNS	37	27	10	27.0	9	7	2	22.2
BSR	47	35	10	22.2	4	2	2	50.0
DCB	45	31	13	29.5	16	13	3	18.8
DIR	17	9	7	43.8	1	1	0	0.0
DMB	25	15	9	37.5	8	4	2	33.3
SES	21	12	9	42.9	4	3	1	25.0

C-2. PUI-direct Proposal Group

DIV	MALE DECLINE	MALE AWARD	MALE PROPOSAL	MALE RATIO	FEMALE DECLINE	FEMALE AWARD	FEMALE PROPOSAL	FEMALE RATIO
AST	5	5	10	50.00	1	1	2	50.00
CHE	117	10	128	7.87	17	2	19	10.53
DMR	48	6	54	11.11	8	0	8	0.00
DMS	109	41	156	27.33	13	9	23	40.91
PHY	23	18	41	43.90	4	1	5	20.00
ASC	5	0	5	0.00	1	0	1	0.00
CCR	28	5	35	15.15	3	5	11	62.50
CDA	17	3	26	15.00	1	1	2	50.00
CSE	0	0	1	***	0	0	0	***
IRI	37	5	43	11.90	6	0	6	0.00
MIP	23	3	27	11.54	1	2	3	66.67
NCR	9	2	11	18.18	0	0	0	***
ATM	16	16	35	50.00	1	3	4	75.00
DPP	27	12	41	30.77	2	2	4	50.00
EAR	80	16	97	16.67	9	3	13	25.00
OCE	28	12	40	30.00	6	2	9	25.00
BCS	43	15	59	25.86	2	1	3	33.33
CTS	56	11	68	16.42	2	1	3	33.33
DDM	27	6	33	18.18	2	1	3	33.33
ECD	4	2	6	33.33	0	0	0	***
ECS	72	5	82	6.49	3	5	8	62.50
EID	0	4	4	100.00	0	1	1	100.00
ENG	69	2	71	2.82	1	0	1	0.00
MSS	95	9	111	8.65	2	0	2	0.00
BBS	84	7	92	7.69	22	4	28	15.38
BNS	79	20	103	20.20	45	6	52	11.76
BSR	102	19	123	15.70	21	2	25	8.70
DCB	74	7	85	8.64	35	6	45	14.63
DIR	35	10	48	22.22	2	1	3	33.33
DMB	29	5	41	14.71	13	0	16	0.00
SES	73	1	74	1.35	23	3	26	11.54

C-3. RCU Proposal Group

DIV	MALE PROPOSAL	MALE DECLINE	MALE AWARD	MALE RATIO	FEMALE PROPOSAL	FEMALE DECLINE	FEMALE AWARD	FEMALE RATIO
AST	277	182	93	33.8	31	19	11	36.7
CHE	993	661	287	30.3	96	69	22	24.2
DMR	837	620	212	25.5	62	43	17	28.3
DMS	1198	595	541	47.6	86	45	35	43.8
PHY	322	155	156	50.2	17	9	8	47.1
ASC	48	32	15	31.9	2	0	2	100.0
CCR	372	241	112	31.7	35	14	17	54.8
CDA	135	89	37	29.4	13	7	5	41.7
CSE	1	0	0	***	0	0	0	***
IRI	361	265	90	25.4	41	32	9	22.0
MIP	253	179	63	26.0	5	2	3	60.0
NCR	127	97	24	19.8	5	5	0	0.0
ATM	335	128	195	60.4	19	6	13	68.4
DPP	238	147	89	37.7	32	23	9	28.1
EAR	1097	709	360	33.7	100	69	30	30.3
OCE	788	417	332	44.3	110	60	44	42.3
BCS	484	345	129	27.2	30	17	11	39.3
CTS	686	449	222	33.1	34	23	9	28.1
DDM	365	275	83	23.2	21	14	7	33.3
ECD	64	54	9	14.3	1	1	0	0.0
ECS	564	382	157	29.1	29	21	5	19.2
EET	334	231	93	28.7	22	16	5	23.8
ENG	309	249	55	18.1	32	25	7	21.9
MSS	1046	834	170	16.9	45	33	10	23.3
BBS	203	156	16	9.3	40	28	7	20.0
BNS	1142	787	271	25.6	406	287	92	24.3
BSR	1105	804	289	26.4	202	141	59	29.5
DCB	1170	829	177	17.6	421	317	68	17.7
DIR	426	265	122	31.5	74	44	25	36.2
DMB	773	482	164	25.4	229	164	25	13.2
SES	951	679	262	27.8	152	113	36	24.2

Appendix D.

FY 1988 Proposals by Division and Race/Ethnicity of Proposer

D-1. RUI Proposal Group

DIV	WHITE PROPOSAL	WHITE DECLINE	WHITE AWARD	WHITE RATIO	BLACK PROPOSAL	BLACK DECLINE	BLACK AWARD	BLACK RATIO	HISPANIC PROPOSAL	HISPANIC DECLINE	HISPANIC AWARD	HISPANIC RATIO
AST	8	3	5	62.5	0	0	0	***	0	0	0	***
CNE	81	99	16	21.3	0	0	0	***	0	0	0	***
DMR	19	13	6	31.6	2	2	0	0.0	1	1	0	0.0
DMS	47	33	13	28.3	0	0	0	***	2	2	0	0.0
PHY	21	12	8	40.0	0	0	0	***	0	0	0	***
CCR	13	8	5	38.5	0	0	0	***	0	0	0	***
IRI	6	4	2	33.3	0	0	0	***	0	0	0	***
MIP	5	4	1	20.0	0	0	0	***	0	0	0	***
MCR	7	1	6	85.7	0	0	0	***	0	0	0	***
ATM	10	5	5	50.0	0	0	0	***	0	0	0	***
DPP	1	0	1	100.0	0	0	0	***	0	0	0	***
EAR	48	27	18	40.0	0	0	0	***	0	0	0	***
OCE	14	11	3	21.4	0	0	0	***	0	0	0	***
BCS	4	3	1	25.0	0	0	0	***	0	0	0	***
CTS	2	2	0	0.0	0	0	0	***	0	0	0	***
DDM	6	5	1	16.7	0	0	0	***	0	0	0	***
ECD	0	0	0	***	0	0	0	***	0	0	0	***
ECS	8	4	4	50.0	0	0	0	***	1	0	0	***
EET	0	0	0	***	1	1	0	0.0	0	0	0	***
MSS	4	4	0	0.0	0	0	0	***	0	0	0	***
BMS	44	32	12	27.3	0	0	0	***	0	0	0	***
BSR	49	35	12	25.5	0	0	0	***	0	0	0	***
DCB	55	40	14	25.9	0	0	0	***	1	0	1	100.0
DIR	18	10	7	41.2	0	0	0	***	0	0	0	***
DMB	30	18	9	33.3	0	0	0	***	0	0	0	***
SES	22	13	9	40.9	0	0	0	***	0	0	0	***

DIV	NAT AMER PROPOSAL	NAT AMER DECLINE	NAT AMER AWARD	NAT AMER RATIO	ASIAN PROPOSAL	ASIAN DECLINE	ASIAN AWARD	ASIAN RATIO	UNKNOWN PROPOSAL	UNKNOWN DECLINE	UNKNOWN AWARD	UNKNOWN RATIO
AST	0	0	0	***	1	0	1	100.0	0	0	0	***
CNE	0	0	0	***	3	3	0	0.0	0	0	0	***
DMR	0	0	0	***	1	1	0	0.0	0	0	0	***
DMS	0	0	0	***	9	7	1	12.5	1	1	0	0.0
PHY	0	0	0	***	4	3	1	25.0	0	0	0	***
CCR	0	0	0	***	1	1	0	0.0	0	0	0	***
IRI	0	0	0	***	2	1	1	50.0	0	0	0	***
MIP	0	0	0	***	1	1	0	0.0	0	0	0	***
MCR	0	0	0	***	1	0	1	100.0	0	0	0	***
ATM	0	0	0	***	0	0	0	***	0	0	0	***
DPP	0	0	0	***	0	0	0	***	0	0	0	***
EAR	0	0	0	***	3	3	0	0.0	0	0	0	***
OCE	1	0	1	100.0	0	0	0	***	0	0	0	***
BCS	0	0	0	***	0	0	0	***	0	0	0	***
CTS	0	0	0	***	1	0	1	100.0	0	0	0	***
DDM	0	0	0	***	0	0	0	***	1	0	1	100.0
ECD	0	0	0	***	0	0	0	***	1	0	1	100.0
ECS	0	0	0	***	7	4	2	33.3	0	0	0	***
EET	0	0	0	***	0	0	0	***	0	0	0	***
MSS	0	0	0	***	3	2	1	33.3	0	0	0	***
BMS	0	0	0	***	1	1	0	0.0	1	1	0	0.0
BSR	0	0	0	***	2	2	0	0.0	0	0	0	***
DCB	0	0	0	***	3	3	0	0.0	2	1	1	50.0
DIR	0	0	0	***	0	0	0	***	0	0	0	***
DMB	0	0	0	***	2	1	1	50.0	1	0	1	100.0
SES	0	0	0	***	1	0	1	100.0	2	2	0	0.0

D-2. PUI-direct Proposal Group

DIV	WHITE PROPOSAL	WHITE DECLINE	WHITE AWARD	WHITE RATIO	BLACK PROPOSAL	BLACK DECLINE	BLACK AWARD	BLACK RATIO	HISPANIC PROPOSAL	HISPANIC DECLINE	HISPANIC AWARD	HISPANIC RATIO
AST	12	6	6	50.00	0	0	0	***	0	0	0	***
CHE	131	120	10	7.69	1	0	1	100.00	2	1	1	50.00
DMR	42	36	6	14.29	3	3	0	0.00	4	4	0	0.00
DMS	148	101	43	29.86	4	3	1	25.00	4	2	2	50.00
PHY	39	23	16	41.03	2	0	2	100.00	1	1	0	0.00
ASC	4	4	0	0.00	0	0	0	***	2	2	0	0.00
CCR	36	23	9	28.13	1	0	0	***	0	0	0	***
CDA	15	9	1	10.00	4	2	2	50.00	3	1	1	50.00
CSE	1	0	0	***	0	0	0	***	0	0	0	***
IRI	36	32	4	11.11	0	0	0	***	0	0	0	***
MIP	14	10	3	23.08	0	0	0	***	0	0	0	***
NCR	6	5	1	16.67	0	0	0	***	0	0	0	***
ATM	30	13	14	51.85	0	0	0	***	0	0	0	***
DPP	42	26	14	35.00	0	0	0	***	0	0	0	***
EAR	101	81	18	18.18	0	0	0	***	1	1	0	0.00
OCE	43	30	12	28.57	0	0	0	***	1	0	1	100.00
BCS	38	28	10	26.32	0	0	0	***	7	5	1	16.67
CTS	44	38	5	11.63	1	1	0	0.00	3	3	0	0.00
DDM	17	12	5	29.41	1	1	0	0.00	1	1	0	0.00
ECD	6	4	2	33.33	0	0	0	***	0	0	0	***
ECS	52	40	8	16.67	1	1	0	0.00	2	1	1	50.00
EID	4	0	4	100.00	0	0	0	***	0	0	0	***
ENG	57	56	1	1.75	2	2	0	0.00	1	1	0	0.00
HSS	69	61	5	7.58	6	6	0	0.00	4	3	1	25.00
BBS	108	94	11	10.48	6	6	0	0.00	0	0	0	***
BNS	144	116	23	16.55	3	1	2	66.67	2	1	1	50.00
BSR	140	117	19	13.97	1	0	1	100.00	0	0	0	***
DCB	113	97	10	9.35	3	2	1	33.33	1	1	0	0.00
DIR	49	36	11	23.40	0	0	0	***	2	2	0	0.00
DMB	45	31	5	13.89	2	1	0	0.00	0	0	0	***
SES	90	86	4	4.44	4	4	0	0.00	1	1	0	0.00

PUI-direct data continued on following page

D-2. PUI-direct Proposal Group, Cont.

DIV	NAT AMER PROPOSAL	NAT AMER DECLINE	NAT AMER AWARD	NAT AMER RATIO	ASIAN PROPOSAL	ASIAN DECLINE	ASIAN AWARD	ASIAN RATIO	UNKNOWN PROPOSAL	UNKNOWN DECLINE	UNKNOWN AWARD	UNKNOWN RATIO
AST	0	0	0	***	0	0	0	***	0	0	0	***
CHE	0	0	0	***	11	11	0	0.00	2	2	0	0.00
DMR	0	0	0	***	13	13	0	0.00	0	0	0	***
DMS	1	1	0	0.00	20	13	4	23.53	3	3	0	0.00
PHY	0	0	0	***	3	2	1	33.33	1	1	0	0.00
ASC	0	0	0	***	1	1	0	0.00	0	0	0	***
CCR	0	0	0	***	9	8	1	11.11	1	1	0	0.00
CDA	0	0	0	***	3	3	0	0.00	6	5	1	16.67
CSE	0	0	0	***	0	0	0	***	0	0	0	***
IRI	0	0	0	***	13	11	1	8.33	0	0	0	***
MIP	1	1	0	0.00	15	13	2	13.33	0	0	0	***
NCR	0	0	0	***	5	4	1	20.00	0	0	0	***
ATM	0	0	0	***	8	3	5	62.50	1	1	0	0.00
DPP	0	0	0	***	3	3	0	0.00	0	0	0	***
EAR	1	1	0	0.00	7	6	1	14.29	0	0	0	***
OCE	0	0	0	***	5	4	1	20.00	0	0	0	***
BCS	0	0	0	***	16	11	5	31.25	2	2	0	0.00
CTS	0	0	0	***	23	16	7	30.43	0	0	0	***
DDM	0	0	0	***	17	15	2	11.76	0	0	0	***
ECD	0	0	0	***	0	0	0	***	0	0	0	***
ECS	0	0	0	***	34	32	1	3.03	1	1	0	0.00
EID	0	0	0	***	1	0	1	100.00	0	0	0	***
ENG	0	0	0	***	11	11	0	0.00	1	0	1	100.00
MSS	0	0	0	***	34	27	3	10.00	0	0	0	***
BBS	0	0	0	***	4	4	0	0.00	2	2	0	0.00
BNS	0	0	0	***	5	5	0	0.00	1	1	0	0.00
BSR	0	0	0	***	2	2	0	0.00	5	4	1	20.00
DCB	1	0	1	100.00	8	6	1	14.29	4	3	0	0.00
DIR	0	0	0	***	2	1	0	0.00	0	0	0	***
DMB	0	0	0	***	8	8	0	0.00	2	2	0	0.00
SES	0	0	0	***	6	6	0	0.00	1	1	0	0.00

D-3. RCU Proposal Group

DIV	WHITE PROPOSAL	WHITE DECLINE	WHITE AWARD	WHITE RATIO	BLACK PROPOSAL	BLACK DECLINE	BLACK AWARD	BLACK RATIO	HISPANIC PROPOSAL	HISPANIC DECLINE	HISPANIC AWARD	HISPANIC RATIO
AST	287	190	94	33.1	2	1	1	50.0	3	2	1	33.3
CHE	1005	677	283	29.5	10	6	2	25.0	11	9	2	18.2
DMR	733	529	201	27.5	3	3	0	0.0	19	16	2	11.1
DMS	1099	520	517	49.9	10	5	4	44.4	21	11	9	45.0
PHY	296	139	148	51.6	2	0	2	100.0	4	2	2	50.0
ASC	42	26	15	36.6	0	0	0	***	2	1	1	50.0
CCR	294	175	100	36.4	1	1	0	0.0	1	1	0	0.0
CDA	121	81	32	28.3	2	0	1	100.0	0	0	0	***
CSE	1	0	0	***	0	0	0	***	0	0	0	***
IRI	321	235	81	25.6	6	6	0	0.0	4	4	0	0.0
MIP	168	118	44	27.2	0	0	0	***	3	3	0	0.0
NCR	92	69	17	19.8	0	0	0	***	4	3	1	25.0
ATM	301	103	187	64.5	3	1	1	50.0	6	2	4	66.7
DPP	253	156	95	37.8	1	0	1	100.0	1	1	0	0.0
EAR	1118	727	366	33.5	6	3	1	25.0	11	6	4	40.0
OCE	851	449	360	44.5	0	0	0	***	6	3	3	50.0
BCS	385	266	111	29.4	3	3	0	0.0	14	10	3	23.1
CTS	560	355	191	35.0	2	1	1	50.0	12	10	1	9.1
DDM	262	197	60	23.3	12	12	0	0.0	7	4	3	42.9
ECD	55	49	6	10.9	0	0	0	***	0	0	0	***
ECS	426	302	108	26.3	5	4	1	20.0	6	3	1	25.0
EET	281	187	83	30.7	2	1	1	50.0	5	4	1	20.0
ENG	281	222	54	19.6	5	5	0	0.0	5	4	1	20.0
MSS	795	623	141	18.5	8	4	3	42.9	17	15	2	11.8
BBS	224	173	21	10.8	4	2	2	50.0	2	2	0	0.0
BNS	1459	1014	344	25.3	9	6	3	33.3	20	14	5	26.3
BSR	1253	899	341	27.5	1	1	0	0.0	14	14	0	0.0
DCB	1414	1006	224	18.2	11	6	5	45.5	14	13	1	7.1
DIR	460	285	137	32.5	2	1	1	50.0	1	1	0	0.0
DMB	886	577	163	22.0	6	4	2	33.3	6	1	4	80.0
SES	994	700	281	28.6	14	13	1	7.1	9	7	2	22.2

RCU data continued on following page

D-3. RCU Proposal Group, Cont.

DIV	NAT AMER PROPOSAL	NAT AMER DECLINE	NAT AMER AWARD	NAT AMER RATIO	ASIAN PROPOSAL	ASIAN DECLINE	ASIAN AWARD	ASIAN RATIO	UNKNOWN PROPOSAL	UNKNOWN DECLINE	UNKNOWN AWARD	UNKNOWN RATIO
AST	0	0	0	***	13	7	6	46.2	5	2	3	60.0
CHE	1	0	1	100.0	56	34	19	35.8	6	4	2	33.3
DMR	0	0	0	***	139	112	24	17.6	10	5	5	50.0
DMS	3	1	2	66.7	137	98	36	26.9	18	5	12	70.6
PHY	1	1	0	0.0	31	20	9	31.0	7	2	5	71.4
ASC	0	0	0	***	5	4	1	20.0	2	1	1	50.0
CCR	4	4	0	0.0	79	61	17	21.8	33	18	12	40.0
CDA	0	0	0	***	16	10	6	37.5	10	6	3	33.3
CSE	0	0	0	***	0	0	0	***	0	0	0	***
IRI	0	0	0	***	59	44	14	24.1	15	11	4	26.7
MIP	0	0	0	***	86	60	21	25.9	1	0	1	100.0
NCR	0	0	0	***	32	28	4	12.5	4	2	2	50.0
ATM	0	0	0	***	44	28	16	36.4	1	1	0	0.0
DPP	0	0	0	***	13	11	2	15.4	2	2	0	0.0
EAR	2	1	1	50.0	57	39	17	30.4	2	1	1	50.0
OCE	0	0	0	***	41	25	13	34.2	0	0	0	***
BCS	0	0	0	***	106	78	25	24.3	7	6	1	14.3
CTS	1	1	0	0.0	141	101	38	27.3	5	4	1	20.0
DDM	0	0	0	***	104	76	26	25.5	1	0	1	100.0
ECD	0	0	0	***	10	6	3	33.3	1	1	0	0.0
ECS	0	0	0	***	149	88	51	36.7	12	8	3	27.3
EET	0	0	0	***	67	54	13	19.4	2	2	0	0.0
ENG	1	1	0	0.0	43	38	5	11.6	7	5	2	28.6
MSS	1	1	0	0.0	261	217	34	13.5	9	7	0	0.0
BBS	0	0	0	***	12	7	0	0.0	1	0	0	***
BNS	4	1	2	66.7	41	32	5	13.5	22	12	5	29.4
BSR	1	1	0	0.0	25	19	5	20.8	17	14	3	17.6
DCB	3	3	0	0.0	111	93	10	9.7	43	28	5	15.2
DIR	0	0	0	***	19	12	4	25.0	21	12	5	29.4
DMB	9	6	0	0.0	79	53	13	19.7	19	5	10	66.7
SES	0	0	0	***	54	50	4	7.4	41	27	14	34.1

Appendix E.

FY 1988 Award Shares by Gender and Race/Ethnicity of Proposers

ELEMENT	BBS			CISE			ENG			GEO			MPS			TOTAL		
	RUI	nRUI	RCU	RUI	nRUI	RCU	RUI	nRUI	RCU	RUI	nRUI	RCU	RUI	nRUI	RCU	RUI	nRUI	RCU
GENDER																		
Unknown	0	0	1	0	4	0.3	0	0	0	0	0	0.3	0	0	1	0	0.3	0.4
Male	85	76	80	86	68	90	89	85	91	100	86	94	83	86	93	86	82	89
Female	15	24	19	14	28	9	11	15	9	0	14	6	17	14	6	14	18	11
RACE/ETH.																		
Black	0	4	1	0	8	0.3	0	0	0.3	0	0	1	0	4	1	0	3	1
Hispanic	1	1	1	0	4	0.5	0	2	1	0	5	1	0	3	1	1	3	1
As./P. Is.	3	1	2	14	16	16	0	11	5	36	30	20	6	5	7	6	11	8
Nat. Am	0	1	0.1	0	0	0	4	0	0.1	0	0	0	0	0	0.2	1	0.3	0.1
White	92	91	93	86	68	76	96	88	94	45	63	77	94	87	89	90	82	88
Unknown	3	1	3	0	4	7	0	0	0.1	18	2	1	0	0	2	2	1	2

Totals may not equal 100% due to rounding.
RUI = proposals submitted from PUIs under RUI initiative
nRUI = proposals submitted from PUI institutions to standard NSF programs (PUI-direct).
RCU = proposals submitted from research competitive universities

Appendix F.

FY 1988 Declination Shares by Gender and Race/Ethnicity of Proposers

ELEMENT	BBS			CISE			ENG			GEO			MPS			TOTAL		
	RUI	nRUI	RCU	RUI	nRUI	RCU	RUI	nRUI	RCU	RUI	nRUI	RCU	RUI	nRUI	RCU	RUI	nRUI	RCU
GENDER																		
Unknown	0	1	0.5	0	2	1	0	0.3	0.2	0	1	0.1	0	0.3	0.2	0	1	0.3
Male	81	74	78	90	89	93	100	96	95	96	89	90	93	87	92	89	84	87
Female	19	25	21	10	9	6	0	3	5	4	11	10	7	12	8	11	15	13
RACE/ETH.																		
Black	0	2	1	0	2	1	4	3	1	0	0	0.2	1	2	1	1	2	1
Hispanic	0	1	1	0	2	1	0	4	2	0	1	1	2	2	2	1	2	1
As./P. Is.	4	5	5	10	30	21	24	29	22	7	10	6	10	11	11	8	14	12
Nat. Am	0	0	0.2	0	1	0.4	0	0	0.1	0	1	0.1	0	0.3	0.1	0	0.2	0.2
White	93	90	91	85	60	73	72	62	74	93	89	92	86	82	85	89	80	85
Unknown	2	2	2	5	5	4	0	1	1	0	1	0.3	1	2	1	2	2	2

Totals may not equal 100% due to rounding.
RUI = proposals submitted from PUIs under RUI initiative
nRUI = proposals submitted from PUI institutions to standard NSF programs (PUI-direct).
RCU = proposals submitted from research competitive universities

Appendix G.

FY 1988 Award Shares by Number of Proposals Submitted in FYs 1983-1987

ELEMENT	BBS			CISE			ENG			GEO			MPS			TOTAL		
# Proposals	RUI	nRUI	RCU	RUI	nRUI	RCU	RUI	nRUI	RCU	RUI	nRUI	RCU	RUI	nRUI	RCU	RUI	nRUI	RCU
0	27	32	21	21	44	37	10	38	20	25	22	10	26	29	15	25	31	18
1	30	21	24	50	28	23	27	21	17	28	14	12	22	32	24	29	23	20
2-5	42	44	46	21	28	35	54	35	48	43	43	43	48	37	52	43	39	47
6-10	1	2	8	7	0	4	10	5	12	4	15	25	4	2	9	4	5	12
11-20	0	1	1	0	0	0.3	0	2	3	0	6	9	0	0	0.3	0	2	3
> 20	0	0	0.1	0	0	0.3	0	0	0.5	0	0	1	0	0	0	0	0	0.4

Totals may not equal 100% due to rounding.
RUI = proposals submitted from PUIs under RUI initiative
nRUI = proposals submitted from PUI institutions to standard NSF programs (PUI-direct).
RCU = proposals submitted from research competitive universities

Appendix H.

FY 1988 Declination Shares by Number of Proposals in FYs 1983-1987

ELEMENT	BBS			CISE			ENG			GEO			MPS			TOTAL		
# Proposals	RUI	nRUI	RCU	RUI	nRUI	RCU	RUI	nRUI	RCU	RUI	nRUI	RCU	RUI	nRUI	RCU	RUI	nRUI	RCU
0	34	51	37	55	53	38	28	49	30	41	33	16	45	43	30	39	47	32
1	25	19	22	20	27	23	28	24	20	17	19	12	20	24	20	22	22	20
2-5	39	27	34	20	17	33	44	24	39	37	32	44	32	31	47	36	27	38
6-10	2	2	6	5	3	5	0	3	9	4	13	19	2	2	3	2	4	8
11-20	0	1	0.7	0	0	1	0	0.3	2	0	4	8	0	0	1	0	1	2
> 20	0	0	0.0	0	0	0.1	0	0	0.2	0	0	0.5	0	0	0	0	0	0.1

Totals may not equal 100% due to rounding.
RUI = proposals submitted from PUIs under RUI initiative
nRUI = proposals submitted from PUI institutions to standard NSF programs (PUI-direct).
RCU = proposals submitted from research competitive universities

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE $300

RETURN THIS COVER SHEET TO ROOM 233, IF YOU DO NOT WISH TO RECEIVE THIS MATERIAL ☐, OR IF CHANGE OF ADDRESS IS NEEDED ☐ INDICATE CHANGE, INCLUDING ZIP CODE ON THE LABEL. (DO NOT REMOVE LABEL).

BULK RATE
POSTAGE & FEES PAID
National Science Foundation
Permit No. G-69

KWC 1010000
1000000, 0600000, 0400000

NSF 90-36